REMARKS/ARGUMENTS

In view of the foregoing amendments and following remarks, favorable reconsideration of the pending claims is respectfully requested.

Status of the Claims

Claims 1-9, 11-12, and 14 are pending in the application.

Claim 1 has been amended to further clarify the claimed invention. Specifically, Claim 1 has been amended to recite that polyolefin material comprises a polymer matrix in which the fatty acid is dispersed, and to clarify that the composition of a silicone compound and a quaternary ammonium compound is applied to the surface of the polyolefin material.

Claims 4-6 have been amended to be consistent with the amendments to Claim 1,

Claim 14 has been amended to clarify the method steps of preparing the hydrophilic material.

Claims 15-25 have been added and are directed to various embodiments of the invention as described in paragraphs [0034]-[0037], for example.

Prior Art Rejections

Claims 1-9, 11-12, and 14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,008,145 to Dzen et al. in view of U.S. Patent Publication No. 2001/0008965 to Kinn et al. Applicants respectfully traverse this rejection.

In order to establish a *prima facie* case of obviousness, the combination of references must disclose or suggest each and every element. Further, the combination must provide predictable result, and the Here, Applicants submit that the Examiner has failed to establish a prima facie case of obviousness because the combination of cited references fails to disclose or suggest each and every element recited in the claims.

Before discussing the rejections in detail, it may be useful to first briefly discuss the claimed invention. The claimed invention is directed to hydrophilic polyolefin materials. The hydrophilic polyolefin material includes a mixture of a polyolefin and a fatty acid that is added as a melt additive. Because the fatty acid is added as a melt additive during extrusion of the polyolefin material, it is necessarily intermixed and dispersed through the polyolefin material. Further, some of the fatty acid will be disposed towards the surface of the polyolefin material while the remainder of the fatty acid will disposed in the interior of the polyolefin material.

Significantly, the fatty acid is incorporated into the structure of the polyolefin material and is not a coating or otherwise deposited on the surface of the polyolefin material. That is, the fatty acids in the claimed polyolefin materials are part of the polymeric matrix.

After the mixture of the polyolefin material and fatty acid has been extruded, the resulting polyolefin material is treated with a formulation comprising a comprising a silicone compound and a quaternary ammonium compound. As described in paragraph [0036], the formulation is preferably allowed to set physically on the surface of the polyolefin material. In other words, the formulation forms a coating on the surface of the polyolefin material. As discussed in paragraphs [0029] and [0036], the formulation of the silicone compound and a quaternary ammonium compound activates the fatty acids in the polyolefin material that are disposed towards the surface of the polyolefin material to thereby render the polyolefin material hydrophilic.

In contrast to the claimed invention, Dzen describes polyolefin fibers that are rendered hydrophilic by applying a finishing composition to the surface of the fibers. The finishing composition comprises a combination of a non-ionic surfactant (Component A), which can be an alkoylated C_8 to C_{18} fatty acid, and a quaternary ammonia compound (Component B). As can be seen from the formula for Component B described at column 2, line 25 through column 3, line 22, the quaternary ammonia compound is a relatively large compound having many possible substituents. It is also noteworthy to point out that Dzen describes a litany of various compounds that can be used as the non-ionic surfactant, amongst which fatty acids are only one possible choice. As described on column 4, lines 28-31, "the composition [comprising components A and B] used in each case is applied in the form of an aqueous emulsion or in the form of an aqueous dispersion to the fibres, filaments or non-wovens, namely in a quantity of from 0.2 to 2%, relative to the dry weight of the respective product (fibre, filament, fleece)." (Emphasis Added). In other words, the composition containing Component A is applied to the surface of the fibers, and therefore is only a surface treatment and is not incorporated into or otherwise part of the polymeric matrix of the fibers of Dzen.

Kinn is cited by the Examiner for allegedly showing that fatty acids are known melt additives that can be used to render polymeric fibers hydrophilic. The Examiner also relies on

Kinn for describing monomer and dimmer fatty acids having a carbon chain length in the range of 6 to 50, preferably 18 to 36.

1. The combination of Dzen and Kinn does not disclose or suggest each and every element of Claim 1

The combination of Dzen and Kinn does not disclose or suggest a polyolefin material having a polymer matrix in which a fatty acid is dispersed within the matrix and in which a composition of a silicone compound and a quaternary ammonium compound disposed on a surface of the polyolefin material and activates the hydrophilic properties of the fatty acids disposed towards the surface of the polyolefin material.

As discussed above, Dzen is directed to rendering polymeric materials hydrophilic by use of a finish coating using a multicomponent composition that is applied only to the surface of the polymer material. That is, Dzen does not include a fatty acid incorporated into the matrix, and therefore also does not disclose or suggest the claimed hydrophilic material in which fatty acids in the polymer matrix are activated by a coating comprising a silicone compound and a quaternary ammonium compound.

The Examiner attempts to compensate for this deficiency by citing Kinn and asserting that the use of fatty acids as hydrophilic melt additives is known. However, this assertion still does not overcome the deficiencies in the combination of references. In particular, the combination of references still does not disclose or suggest the claimed invention in which the hydrophilic properties of a fatty acid in the polymer matrix is activated by a composition comprising a silicone compound and a quaternary ammonium compound that is disposed on the surface of the polyolefin material. More specifically, the combination of Dzen and Kinn does not disclose or suggest a polyolefin material having fatty acids at the surface of the polyolefin material, while still part of the polymer matrix, that are activated by a composition disposed on the surface of the polyolefin material. A hydrophilic polyolefin material having the claimed structure is simply not disclosed or suggested by the combination of Dzen and Kinn. Accordingly, the combination of Dzen and Kinn fails to disclose or suggest the claimed invention, and therefore the Examiner has failed to establish a *prima facie* case of obviousness.

Further, the Examiner has failed to articulate a reasonable explanation as to why one of ordinary skill in the art would even combine the references as set forth in the Office Action. The

Examiner's only basis appears to be based on the assertion that fatty acids are known hydrophilic melt additives. However, this assertion does not provide a basis for why one of skill in the art would modify Dzen to include a fatty acid additive in addition to the hydrophilic finish coating to which Dzen is directed. This is particularly true since Dzen describes that the composition described therein meets the objective of attaining a "composition for the permanent hydrophilation of polyolefin fibres and filaments..." See column 2, lines 19-23. Since Dzen reports to meet the objectives discussed therein, there is no reason for modifying Dzen to include a fatty acid melt additive as suggested by the Examiner. In fact, the only basis for such a modification is from Applicants' own teachings, which is clearly based on hindsight, and as such, is impermissible.

Moreover, the Examiner asserts that the surface coating composition of Dzen already includes a fatty acid as a component. Based on this teaching, there is no basis as to why one of ordinary skill in the art would also include a fatty acid as a melt additive. Such a modification would seem to be unnecessary in view of the teachings of Dzen. Accordingly, it is respectfully submitted that one of ordinary skill in the art would not modify the teachings of Dzen or otherwise combine Dzen with the teachings of Kinn. For this additional reason, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness, and withdrawal of this rejection is respectfully requested.

2. The combination of Dzen and Kinn does not disclose or suggest each and every element of Claim 14

The combination of Dzen and Kinn does not disclose each and every element recited in Claim 14, and therefore the claimed invention is patentable over Dzen and Kinn. In particular, Dzen and Kinn do not disclose or suggest the claimed method of rendering a polyolefin material hydrophilic comprising the combination of the following steps of:

forming a polymer matrix of a polyolefin and a melt additive containing a fatty ester, wherein the fatty acid is dispersed within the polymer matrix;

extruding the polymer matrix to form a polyolefin material;

applying a composition of a silicone compound and a quaternary ammonium compound to a surface of the polyolefin material;

activating hydrophilic properties of fatty acids disposed towards the surface of the polyolefin material with said silicone compound and a quaternary ammonium compound such that the surface of the polyolefin material is hydrophilic.

In particular, the combination does not disclose or suggest a method in which hydrophilic properties of a fatty acid melt additive that is part of a polymer matrix is activated by applying a coating to the surface of the polyolefin material. In contrast, Dzen discloses a method of applying a finish coating to the polyolefin material wherein the finish coating may include a fatty acid. Kinn simply discloses the use of a hydrophilic melt additive. Both references are completely silent with respect to the combination of a melt additive and a subsequent coating that activates hydrophilic properties of the melt additive. Accordingly, the combination of Dzen and Kinn fails to disclose or suggest the claimed method, and therefore Applicants respectfully submit that the claimed invention is patentable over the cited art. Withdrawal of this rejection is respectfully requested.

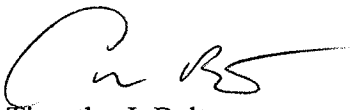
Additionally, one of ordinary skill in the art would not modify the cited references to arrive at the claimed invention for the same reasons given above. That is, there is no reasonable basis for why one of skill in the art would modify Dzen to include a fatty acid additive in addition to the hydrophilic finish coating to which Dzen is directed. As discussed above, Dzen describes that the composition described therein meets the objective of attaining a "composition for the permanent hydrophilation of polyolefin fibres and filaments..." See column 2, lines 19-23. Since Dzen reports to meet the objectives discussed therein, there is no reason for modifying Dzen to include a fatty acid melt additive as suggested by the Examiner.

Further, both these references contain no disclosure or suggestion that would lead one to modify Dzen as contemplated by the Examiner. Indeed, the only possible source for such a suggestion is from the teachings of Applicants' application, which is clearly based on hindsight, and as such, is impermissible. For this additional reason, Applicants submit that the Examiner has failed to establish a prima *facie case* of obviousness; withdrawal of the rejections is respectfully requested.

With respect to new Claims 15-25, it is respectfully submitted that they are patentable over the cited art for the reasons given above.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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